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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,772	06/28/2006	Yoshio Fukutomi	292227US8PCT	3863

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EXAMINER	
BUTCHER, BRIAN M	

ART UNIT	PAPER NUMBER
2627	

NOTIFICATION DATE	DELIVERY MODE
12/22/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/584,772	FUKUTOMI ET AL.	
	Examiner	Art Unit	
	BRIAN BUTCHER	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3--6* is/are rejected.

7)☒ Claim(s) *2* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 June 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *28 June 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

Figure 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 5 is objected to because of the following informalities: In lines 28 - 30, "said laser light source passed through said light separator and said reflective light from said optical disk was received by said light receiver for monitoring light source become equal" appears to need a change to -- said laser light source was received by said light receiver for monitoring light source via said light separator become equal -- (See lines 23 – 24 in claim 1). Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gage (United States Patent US 5,363,363), hereinafter referenced as Gage, in view of Yanagawa et al. (United States Patent US 5,555,538), hereinafter referenced as Yanagawa.

Regarding **claim 1**, Gage discloses an apparatus and method for laser noise cancellation which reads on the optical disc apparatus claimed. Gage discloses "An optical disc apparatus" (column 3, lines 34 - 37 'the read/write optical head of FIG. 1 along with the additional apparatus required for reduction of noise according to the present invention is shown', and figure 2), "a laser light source" (figure 2, item 11), "a light receiver for reproducing signal for receiving a reflective light from an optical disk of a laser beam by that said laser light source irradiated the optical disk and converting it into an electric signal" (figure 2, item 16), "a light receiver for monitoring light source for detecting said laser beam from said laser light source" (figure 2, item 21), "a light separator for distributing said laser beam from said laser light source toward said optical disk and said light receiver for monitoring light source and reflecting said reflective light from said optical disk toward said light receiver for reproducing signal" (figure 2, items 13, 11, 5, 21, 16). However, Gage fails to disclose that the "transmittance and reflectance to the s polarization and the p polarization of said light separator are adjusted . . . the difference between a laser noise component received by said light receiver for reproducing signal and a laser noise component received by said light

receiver for monitoring light source after said adjustment is obtained, in order to obtain a reproducing signal in that a desired amount of laser noises were canceled out". The examiner maintains that it was well known in the art for the apparatus for laser noise cancellation disclosed in Gage to include an adjustment of the transmittance and reflectance to the s polarization and the p polarization of a light separator, as taught by Yanagawa.

In a similar field of endeavor Yanagawa discloses an optical system of the same physical layout (see Figure 4, items 20, 25, 21, 2, 24) in which a polarization prism reflects and guides a portion of the incoming light so the transmittance to p-polarized light, Tp, is between 60% to 90%, reflectance to p-polarized light, Rp, is 100-Tp%, transmittance to s-polarized light, Ts, is 100-Rs%, and reflectance to s-polarized light is greater or equal to 14% (column 12, lines 44 -53) which reads on "transmittance and reflectance to the s polarization and the p polarization of said light separator are adjusted . . . the difference between a laser noise component received by said light receiver for reproducing signal and a laser noise component received by said light receiver for monitoring light source after said adjustment is obtained, in order to obtain a reproducing signal in that a desired amount of laser noises were canceled out" because the adjustment of transmittance and reflectance to the s-polarization and the p-polarization is performed to reduce noise.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus for laser noise cancellation of Gage by specifically using the teachings in Yanagawa to adjust the transmittance and

reflectance to the s-polarization and the p-polarization in order to cancel laser noise because one having ordinary skill in the art would recognize that light consists of both a parallel and perpendicular polarization and that an inverse wave of the same polarization is necessary to cancel a polarization specific waveform.

Regarding **claim 3**, Gage and Yanagawa, the combination of hereinafter referenced as GY, disclose everything claimed as applied above (see claim 1), in addition GY disclose that "said light separator is a polarization beam splitter". Specifically, Gage discloses that beam splitter 13 is a polarization beam splitter (column 3, line 39 'the polarization beam splitter 13', and figure 2 item 13).

Regarding **claim 4**, GY disclose everything claimed as applied above (see claim 1), in addition GY disclose that "said transmittance to said S polarization is set at 0%, . . . and said reflectance to the above P polarization is set at 10%" Specifically, Yanagawa discloses a polarization prism that reflects and guides a portion of the incoming light so the transmittance to p-polarized light, Tp, is between 60% to 90%, reflectance to p-polarized light, Rp, is 100-Tp%, transmittance to s-polarized light, Ts, is 100-Rs%, and reflectance to s-polarized light is greater or equal to 14% (column 12, lines 44 -53) which reads on "said transmittance to said S polarization is set at 0%, . . . and said reflectance to the above P polarization is set at 10%" because the claimed value fall within the ranges disclosed by Yanagawa.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus for laser noise cancellation of Gage by specifically using the teachings in Yanagawa to include "said transmittance to

said S polarization is set at 0%, . . . and said reflectance to the above P polarization is set at 10%" because one having ordinary skill in the art would recognize that light consists of both a parallel and perpendicular polarization and that an inverse wave of the same polarization is necessary to cancel a polarization specific waveform.

Claims 5 - 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gage, in view of Yanagawa, and further in view of Kim (United States Patent US 6,958,805), hereinafter referenced as Kim.

Regarding **claim 5**, Gage and Yanagawa in combination of hereinafter referenced as GY, GY disclose everything claimed as applied above (see claim 1), however GY fail to disclose "a polarizer for passing through either one of the TE component and the TM component". The examiner maintains that it was well known in the art for the apparatus for laser noise cancellation disclosed in Gage to include "a polarizer for passing through either one of the TE component and the TM component", as taught by Kim.

In a similar field of endeavor Kim discloses the use of a polarizer with a polarization beam splitter to adjust the light emitted from a laser beam (column 4, lines 33 - 35 'the polarization-rotated laser beam is fed to the polarizer 105 capable of transmitting, e.g., only a S-polarized beam') which reads on "a polarizer for passing through either one of the TE component and the TM component".

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus for laser noise cancellation of

Gage by specifically using the teachings in Kim to include a polarizer because one having ordinary skill in the art would recognize that a polarizer could be used in conjunction with a polarization beam splitter to achieve the transmittance and reflectance requirements disclosed by Yanagawa.

Regarding **claim 6**, GY and Kim, the combination of hereinafter referenced as GYK, disclose everything claimed as applied above (see claim 5), in addition GYK disclose that "said light separator is a polarization beam splitter". Specifically, Gage discloses that beam splitter 13 is a polarization beam splitter (column 3, line 39 'the polarization beam splitter 13', and figure 2 item 13).

Allowable Subject Matter

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 2 recites allowable subject matter, specifically expression (1) in lines 7 - 8 and the definition of the expression's variables in lines 11 – 28. In the prior art, this expression describing the noise canceled amount in terms of transverse electric and transverse magnetic component ratios has not been indicated.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN BUTCHER whose telephone number is (571)270-5575. The examiner can normally be reached on Monday – Friday from 6:30 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young, can be reached at (571) 272 - 7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BMB
December 16, 2008

/Thang V. Tran/
Primary Examiner, Art Unit 2627